TEAK

Family: LAMIACEAE (angiosperm)
Scientific name(s): *Tectona grandis*
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow brown
Sapwood: clearly demarcated
Texture: coarse
Grain: straight
Interlocked Grain: absent
Note: The wood darkens and presents golden glints with age. Sometimes black brown veins. Oily to the touch.

LOG DESCRIPTION

Diameter: 20 – 39.3 inches
Thickness of Sapwood: 0.79– 2.4 inches
Floats: no
Log Durability: good

PHYSICAL PROPERTIES

MECHANICAL/ACOUSTIC

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	Mean	Std. Dev.
Specific Gravity*:	0.67	0.08
Janka Hardness (lbs):	1,070	
Volumetric Shrinkage:	0.34%	0.03%
Total Tangential Shrinkage (TS):	4.7%	0.5%
Total Radial Shrinkage (RS):	2.6%	0.8%
TS/RS Ratio:	1.8	
Fiber Saturation Point:	24%	

Stability: stable
Note: The properties of timbers grown in plantation or in natural forests are often similar, except for durability.

	Mean
Crushing Strength*:	8,122 lbf
Static Bending Strength*:	14,213 lbf
Modulus of Elasticity*:	1,992,818 lbf

Musical Quality Factor: 128.2 measured at 2656 Hz

**At 12% moisture content.*

NATURAL DURABILITY AND TREATABILITY

Fungi and termite resistance refers to end-uses under temperate climate. Except for special comments on sapwood, natural durability is based on mature heartwood. Sapwood must always be considered as non-durable against wood degrading agents. E.N. = Euro Norm

Funghi (According to E.N. standards): class 1 – very durable
Dry Wood Borers: durable (sapwood demarcated, risk limited to sapwood)
Termites (According to E.N. standards): class M – moderately durable
Treatability (according to E.N. standards): class 4 - not permeable
Use class ensured by natural durability: class 4 – in ground or fresh water contact
Species covering the use class 5: yes
Note: The durability of teak wood from plantation is much lower than that of the teak from natural forests. It is moderately resistant to fungi and classified as sensible to durable against termites. This species is listed in the European standard NF EN 350-2 which makes a difference between the Teak from Asia (meaning natural forest) and the teak planted in Asia and other counties; the first on is classified in the natural durability class 1 towards fungi and in natural durability class M towards termites; the second is in the natural durability class 1-3 towards fungi and in natural durability class M-S towards termites. The use class mentioned in Tropix is given for teak from natural forest. According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition. This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high silica content.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any preservative treatment
In case of risk of temporary humidification: does not require any preservative treatment
In case of risk of permanent humidification: does not require any preservative treatment

TEAK

DRYING

Drying Rate: slow
Risk of Distortion: no risk or very slight risk
Risk of Casehardening: no
Risk of Checking: no risk or very slight risk
Risk of Collapse: no
Note: The drying rate may vary from one board to another because of the specific gravity and the important differences of moisture content when green.

Possible Drying Schedule: 6

	Temperature (ºF)		
M.C. (%)	**Dry-Bulb**	**Wet-Bulb**	**Air Humidity (%)**
Green	107.6	105.8	94
50	118.4	109.4	74
30	129.2	114.8	63
20	140	123.8	62
15	140	123.8	62

This schedule is given for information only and is applicable to thickness lower or equal to 1.5 in. It must be used in compliance with the code of practice. For thickness from 1.5 to 3 in, the air relative humidity should be increased by 5% at each step. For thickness over 3 in, a 10% increase should be considered.

SAWING AND MACHINING

Blunting Effect: high
Sawteeth Recommended: stellite-tipped
Cutting Tools: tungsten carbide
Peeling: not recommended or without interest
Slicing: good
Note: Variable silica content. Sawdust may cause skin irritations.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct
Note: Pre-boring recommended due to a slight tendency to split when nailing. Satisfactory gluing on surfaces freshly machined or sanded (the wood contains oleoresins.)

END-USES

Cabinetwork (high class furniture)
Sliced veneer
Ship building (planking and deck)
Veneer for back or face of plywood
Interior/exterior joinery
Light carpentry
Interior/exterior paneling
Flooring
Cooperage
Bridges
Poles
Arched goods
Stakes
Rolling shutters
Turned goods
Stairs
Open boats

MAIN LOCAL NAMES

Country	Local Name
India	Sagwan
Indonesia	Jati, Tek
Laos	May Sak
Thailand	May Sak
Vietnam	Giati
Germany	Teak, Java Teak
Italy	Teck
Myanmar	Kyun

Works Cited:

CIRAD'S *Biomass, Wood, Energy, Bioproducts Research Unit (BioWooEB)*
Meier, E. (2015), Wood, United States of America